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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/633,884

Applicant(s)

KRAISS ET AL.

Examiner

Phillip H. Nguyen

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 May 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

1. This action is in response to the amendment filed on 5/21/2007.
2. Claims 1, 5, 6, 9, 11, 12, 14, 17 and 18 have been amended.
3. Claims 1-20 remain pending and have been considered below.

### *Response to Arguments*

#### *Double Patenting*

4. The amendment filed on 5/21/2007 does not overcome the double patenting rejection to claims 5 of previous action. Therefore, Examiner maintains the rejection.

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. Claim 5 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of copending Application No. 10/454,370 in view of Tamayo et al. (US 6,941,318). Although, the conflicting claims are not identical, they are not patentably distinct from each other because both applications use steps that are analogous. For example, claim 5 of instant application recites, "obtaining a first task request from a front-end software application, the first task request containing a first set of input values and a task name" and claim 1 of copending Application No. 10/454,370 recites, "receive a request from a software application to execute an analytical task, the request including a task name and input information". In effect both recites the same thing. The copending Application No. 10/454,370 does not explicitly disclose version of the data mining model. However, Tamayo discloses an analogous system that generates callable version of data mining model to improve the transparency of data mining models. The callable version of the data mining model can be generated or updated (Col 4, line 52-53, the updated version of data mining model is a new version of data mining model). It would have been obvious to one having an ordinary skill in the art at the time the invention was made to recognize the advantage of Tamayo's approach and combine Tamayo's approach with copending Application No. 10/454,370. One of the skilled in the art would have been motivated to combine Tamayo's approach with copending Application No. 10/454,370 because it could be more easily interpretable by human users (Col 1, line 53).

This is a provisional obviousness-type double patenting rejection.

***Claim Rejections - 35 USC § 112***

7. The amendment filed on 5/21/2007 overcomes the rejection to claims 6, 9, 11, 12 and 18 of previous action. Therefore, the rejection is withdrawn.

***Claim Rejections - 35 USC § 101***

8. The amendment filed on 5/21/2007 does not overcome the rejection to claims 1-4 for directing to non-statutory subject matter of previous action. Therefore, Examiner maintains the rejection.

Claims 1-4 recite a computer system but it appears reasonable to interpret this computer system by one of ordinary skill in the art as software. Applicant's specification provides no explicit and deliberate definition of the components ("model version selection module" and "mapping module") that make up the system other than they could be software components, which are directed to functional descriptive material, per se, and therefore, non-statutory.

***Claim Rejections - 35 USC § 103***

9. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

***Claim Rejections - 35 USC § 102***

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

11. Claims 1-7, 10-13 and 17-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Altschuler et al. (United States Patent No.: US 6,778,971 B1).

As per claim 1:

Altschuler discloses:

- a model version selection module that is operable to use a predefined task name in a task request received from a front-end software application to determine, from predefined task definition information, a specific version of a data mining model to be used during execution of an analytical task (see at least col. 7, lines 21-23 "***determine a task analysis model from the converted (or non-converted uniform) usage data***", also see at least col.13, lines 4-6 "***the usage task data 342 may include records 344, each of which include an optional user ID field 345, a sub-a-ERD field 346, an optional time/date stamp field 347, and a task ID field 348***" – depending on the user inputs to determine a task analysis model that is suitable for a particular task) ;

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- a mapping module that is operable to map, in accordance with predefined mapping definition included in the predefined task definition information, input data included in the task request received from the front-end software application into a format usable by the specific version of the data mining model (see at least col. 16, lines 25-45 "***Mapping (or translation) engines 522 map the different types of objects (or information) to a uniform representation, or a uniform semantic network (or representation), in this instance, an annotated ERD (or a-ERD)...***").

As per claim 2:

Altschuler further discloses:

- wherein the mapping module is operable to map input data included in the task request into a format usable by any version of the data mining model (see at least col. 16, lines 25-45 "***...ERD UML (entity relation diagram – unified modeling language) may be used to map objects having an entity relationship diagram (or ERD) structure to the a-ERD format...***").

As per claim 3:

Altschuler further discloses:

- wherein the mapping module is further operable to map output data generated upon execution of the analytical task into a format usable by the front-end software application (see at least col. 16, lines 25-45 "***...ERD UML (entity***

**relation diagram – unified modeling language) may be used to map objects having an entity relationship diagram (or ERD) structure to the a-ERD format...” – universal format).**

As per claim 4:

Altschuler further discloses:

- wherein the analytical task is a prediction task (***It is a prediction task since the invention may function to target marketing information to users based on user inputs and a task analysis model).***

As per claim 5:

Altschuler further discloses:

- obtaining a first task request from a front-end software application, the first task request containing a first set of input values and a task name (see at least col. 7, lines 1-5 ***“when performing tasks, users will interact with the computer and perform a number of steps (i.e., user inputs) in an attempt to complete the task. These steps (user inputs) are logged in a usage log for further analysis”***, also see at least col.13, lines 4-6 ***“the usage task data 342 may include records 344, each of which include an optional user ID field 345, a sub-a-ERD field 346, an optional time/date stamp field 347, and a task ID field 348”***);



- using the task name to identify a first version of the data mining model to be used when executing a first analytical task (see at least col. 7, lines 21-23 "**determine a task analysis model from the converted (or non-converted uniform) usage data**");
- using a first input mapping function to map the first set of input values into a first set of mapped input values for use by the first version of the data mining model when executing the first analytical task (see at least col. 16, lines 25-45  
**"Mapping (or translation) engines 522 map the different types of objects (or information) to a uniform representation, or a uniform semantic network (or representation), in this instance, an annotated ERD (or a-ERD)..."**);
- obtaining a second task request from the front-end software application, the second task request containing a second set of input values and the task name, and the second set of input values being a subset of the first set of input values (see at least col. 12, lines 63-67 "**During a given session, more than one task may be performed or attempted...each task may have a number of steps (user inputs)**");
- using the task name to identify a second version of the data mining model to be used when executing a second analytical task (see at least col. 7, lines 21-23  
**"determine a task analysis model from the converted (or non-converted uniform) usage data"** – depending on the user inputs to determine a task analysis model for a particular task); and

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- using a second input mapping function to map the second set of input values into a second set of mapped input values for use by the second version of the data mining model when executing the second analytical task (see at least col. 16, lines 25-45 "***Mapping (or translation) engines 522 map the different types of objects (or information) to a uniform representation, or a uniform semantic network (or representation), in this instance, an annotated ERD (or a-ERD)...***").

As per claim 6:

Altschuler further discloses:

- wherein each one of the second set of input values has a data type that matches a data type of one of the input values from the first set of input values (see at least col. 16, lines 25-45 "***...ERD UML (entity relation diagram – unified modeling language) may be used to map objects having an entity relationship diagram (or ERD) structure to the a-ERD format...***" – universal format).

As per claim 7:

Altschuler further discloses:

- sending a first set of output values generated upon execution of the first analytical task to the front-end software application (see at least col. 31, lines 58-64 "***Depending on the allocation of tasks between the front and back end***").

***application processes 116 and 124, respectively, rather than returning the executable object, the back end application process 124 may return, in the communication 2570, a product of object activity (i.e., the values returned when the software object is executed) to the front end application process 116"); and***

- sending a second set of output values generated upon execution of the second analytical task to the front-end software application (see at least col. 12, lines 63-67 "***During a given session, more than one task may be performed or attempted...each task may have a number of steps (user inputs)***" – The process is repeatedly since more than one task may be performed).

As per claim 10:

Altschuler further discloses:

- sending a first set of output values generated upon execution of the first analytical task to the front-end software application includes using a first output mapping function to map the first set of output values into a first set of mapped output values for use by the front-end software application (***It is inherent in order to fulfill the tasks analysis purpose***); and
- sending a second set of output values generated upon execution of the second analytical task to the front-end software application includes using a second output mapping function to map the second set of output values into a second set

of mapped output values for use by the front-end software application (*It is inherent in order to fulfill the tasks analysis purpose*).

As per claims 11 and 12:

Altschuler further discloses:

- wherein the second output mapping function is substantially identical to the first output mapping function (see at least col. 16, line 26 "**Mapping (or translation) engines 552**").

As per claim 17:

Altschuler further discloses:

- importing a first version of a data mining model having a first set of model values, each model value having a data type (see at least col. 7, lines 21-22 "**to determine a task analysis model from the converted (or non-converted uniform) usage data**" – There are at least four task analysis models in Altschuler's approach. Using the user inputs to determine which one is most suitable for a particular task);
- using the first version of the data mining model during execution of a first set of analytical tasks requested by a front-end software application (see at least col. 25 – col. 26, lines 40-67 and lines 1-34 "**Task Boundary Determination Process**");

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- importing a second version of the data mining model having a second set of model values, the second set of model values being a subset of the first set of model values (see at least col. 7, lines 21-22 “**to determine a task analysis model from the converted (or non-converted uniform) usage data**” – There are at least four task analysis models in Altschuler’s approach. Using the user inputs to determine which one is most suitable for a particular task); and
- using the second version of the data mining model during execution of a second set of analytical tasks requested by the front-end software application (see at least col. 25 – col. 26, lines 40-67 and lines 1-34 “**Task Boundary Determination Process**”).

As per claim 18:

Altschuler further discloses:

- wherein importing a second version of the data mining model having a second set of model values includes importing a second version of the data mining model having a second set of model values that each individually have a data type that substantially matches the data type of one of the model values from the first set (see at least col. 16, lines 25-45 “...**ERD UML (entity relation diagram – unified modeling language) may be used to map objects having an entity relationship diagram (or ERD) structure to the a-ERD format...**” – universal format).

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As per claim 19:

Altschuler further discloses:

- wherein the first and second sets of analytical tasks are prediction tasks (*It is a prediction task since the invention may function to target marketing information to users based on user inputs and a task analysis model*).

### ***Claim Rejections - 35 USC § 103***

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 8-9, 14-16 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Altschuler et al. (United States Patent No.: US 6,778,971 B1).

As per claim 8:

Altschuler does not explicitly disclose:

- wherein sending a second set of output values generated upon execution of the second analytical task to the front-end software application includes sending a second set of output values that are a subset of the first set of output values.

However, it would have been obvious to one having an ordinary skill in the art at the time the invention was made to modify Altschuler's approach to allow the second set of

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output values are a subset of the first set of output values when some input fields of the second set are not required to enter by the user.

Therefore, one would have been motivated to modify to allow the front end application to be flexible and user friendly when accepting inputs from the users.

As per claim 9:

Altschuler further discloses:

- wherein sending a second set of output values that are a subset of the first set of output values includes sending a second set of output values that each individually have a data type that matches a data type of one of the output values from the first set of output values (***data types are in a universal format***).

As per claim 14:

Altschuler further discloses:

- providing one or more input data fields to hold input information (see at least col. 13, lines 4-7 "***The usage task data 342 may include records 344, each of which include an optional user ID field 345, a sub-a-ERD field 346, an optional time/date stamp field 347, and a task ID field 348***");
- providing input mapping definition information to map the input information into mapped input information capable of being used by the unique version of the data mining model during execution of the prediction task (see at least col. 16, lines 25-45 "***Mapping (or translation) engines 522 map the different types of***

***objects (or information) to a uniform representation, or a uniform semantic network (or representation), in this instance, an annotated ERD (or a-ERD) to be described in more detail...");***

- providing one or more output data fields to hold output information generated upon execution of the prediction task (see at least col. 31, lines 61-63 "***...the back end application process 124 may return, in communication 2570, a product of the object activity (i.e., the value return when the software object is executed to the front end application process 116...***"); and
- providing output mapping definition information to map the output information into mapped output information capable of being used by a front-end software application (see at least col. 16, lines 25-45 "***Mapping (or translation) engines 522 map the different types of objects (or information) to a uniform representation, or a uniform semantic network (or representation), in this instance, an annotated ERD (or a-ERD) to be described in more detail...***"); and
- storing the mining model class identifier for the data mining model, the unique version identifier, the one or more input data fields, the input mapping definition information, the one or more output data fields, and the output mapping definition information as a prediction task definition that is capable of being accessed when a request is received that the prediction task be performed (see at least col. 13, line 3 "***the defined tasks are stored as usage task data 342***", also see at least



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col. 14, lines 40-55 “....**determining and storing a user ID is not an essential step of the invention...this information is saved**”).

Altschuler does not explicitly disclose:

- providing a mining model class identifier for a data mining model; and
- providing a unique version identifier to identify a unique version of the data mining model to be used during execution of a prediction task.

However, it would have been obvious to one having an ordinary skill in the art at the time the invention was made to recognize that Altschuler teaches four different task analysis models (see at least col. 26, lines 33-34) and to modify Altschuler's approach to include model identifier and version identifier to identify a model and store them for data mining purposes. One would have been motivated to modify because they provide a way to identify a model when selecting one model over a plurality of models.

As per claim 15:

Altschuler further discloses:

- wherein providing input mapping functionality includes providing input mapping functionality that is specific to the unique version of the data mining model to be used during execution of the prediction task (***The mapping (or translation) engines 522 is suitable for all models***).

As per claim 16:

Altschuler further discloses:

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- wherein providing output mapping functionality includes providing output mapping functionality that is specific to the unique version of the data mining model used during execution of the prediction task (*The mapping (or translation) engines 522 is suitable for all models*).

As per claim 20:

Altschuler does not explicitly disclose:

- the use of Predictive Modeling Markup Language (PMML).

However, it would have been obvious to one having an ordinary skill in the art at the time the invention was made to recognize that PMML is well known language for data mining purposes. One would have been motivated to use PMML language in Altschuler's approach because PMML allows data mining applications to produce and consume models for use by data mining applications.

**Conclusion**

14. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phillip H. Nguyen whose telephone number is (571) 270-1070. The examiner can normally be reached on Monday - Thursday 10:00 AM - 3:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wei Y. Zhen can be reached on (571) 272-3708. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PN  
8/3/2007

  
WEI ZHEN  
SUPERVISORY PATENT EXAMINER